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Chemical nomenclature:^{*}

Where to find that name, symbol or unit
that you're looking for

Rules for naming, symbolizing and representing chemical compounds have been published in various journals, leaflets and books. IUPAC has compiled much of this information into a few major reference books, but much remains dispersed in the chemical literature. Chemical nomenclature changes constantly, and it is necessary to publish revisions and additions separately (usually, in the IUPAC journal *Pure & Applied Chemistry*). Other nomenclature reports — recommending terminology, symbols and units for reporting of results — deal with a diverse range of subjects. Collecting such reports into a few subject areas is not always possible or practical — although that is precisely what is attempted here.

The following listing is intended to be a comprehensive compilation of all chemical nomenclature published in recent years. It is presented in two main sections. The first deals with nomenclature of chemical compounds. These are subdivided into Analytical Reagents, Biochemical Compounds, Inorganic Substances, Organic Compounds, and Polymers. The second contains terminology, symbols, units and recommendations for presentation of results. These are divided into General Terminology, Terminology for Chemical Analysis, and Terminology for Spectroscopic Techniques.

NOMENCLATURE OF CHEMICAL COMPOUNDS

I. Analytical Reagents

Guide to Trivial Names, Trade Names and Synonyms for Substances used in Analytical Chemistry, *Pure & Appl. Chem.*, Vol. 50, No. 4 (1978) pp. 339 - 370.

II. Biochemical Compounds

AMINO ACIDS AND DERIVATIVES
*Nomenclature of Amino Acids (Provisional Nomenclature Appendix No. 46, September 1975).

*Symbols for Amino Acid Derivatives and Peptides (*Pure & Appl. Chem.*, Vol. 40, No. 3, 1974, pp. 315 - 331).

BIOCHEMICAL EQUILIBRIUM
*Recommendations for measurement and presentation of Biochemical Equilibrium Data (Provisional Nomenclature Appendix No. 61, July 1977, *Info. Bull.*).

CARBOHYDRATES & SUGARS
Conformational Nomenclature for Five and Six-Membered Ring Forms of Monosaccharides and Their Derivatives (Provisional) (*Pure & Appl. Chem.*, Vol. 53, No. 10, 1981 and also in the *Eur. J. Biochem.*, 111, 295 - 298, 1980).

Abbreviated Terminology of Oligosaccharide Chains (Provisional) (to be published in late 1981 in *Pure & Appl. Chem.* and *J. Biol. Chem.*).

Polysaccharide Nomenclature (Provisional) (to be published in late 1981 in *Pure & Appl. Chem.* and *J. Biol. Chem.*).

Nomenclature of Unsaturated Monosaccharides (Provisional) (to be published in late 1981 in *Pure & Appl. Chem.* and *Eur. J. Biochem.*).

Nomenclature of Branched-chain Monosaccharides (Provisional) (to be published in late 1981 in *Pure & Appl. Chem.* and *Eur. J. Biochem.*).

ENZYMES

Enzyme Nomenclature (1978), published by Academic Press in hardcover and softcover editions. First supplement in *Eur. J. Biochem.*, 104, 1 - 4, 1980. Second supplement published in *Eur. J. Biochem.*, 116, 423 - 435, 1981.

LIPIDS

*Nomenclature of Lipids (Provisional Nomenclature Appendix No. 67, December, 1977).

NUCLEIC ACIDS

*Abbreviations and Symbols for Nucleic Acids, Poly-nucleotides and their Constituents (*Pure & Appl. Chem.*, Vol. 40, No. 3, 1974, pp. 277 - 290).

* This list of IUPAC publications is reprinted from *Chemistry International*, 1981, No. 5, pp. 28-32.

PHOSPHORUS COMPOUNDS

*Nomenclature of Phosphorus-containing Compounds of Biochemical Importance (Provisional Nomenclature Appendix No. 66, December 1977).

PROTEINS & PEPTIDES

*Nomenclature of Peptide Hormones (Provisional Nomenclature Appendix No. 48, September 1975).

*Abbreviations and Symbols for the Description of Conformation of Polypeptide Chains (*Pure & Appl. Chem.*, Vol. 40, No. 3, 1974, pp. 291 - 308).

*Abbreviated Nomenclature of Synthetic Polypeptides (Polymerized Amino Acids) *Pure & Appl. Chem.*, Vol. 33, Nos. 2 - 3, 1973, pp. 437 - 444.

Nomenclature of Iron-Sulfur Proteins (*Eur. J. Biochem.*, 93, 427 - 430, 1979; corrected in *Eur. J. Biochem.*, 102, 315, 1979).

*A One-letter Notation for Amino Acid Sequences (*Pure & Appl. Chem.*, Vol. 31, No. 4, 1972, pp. 639 - 645).

Rules for Naming Synthetic Modifications of Natural Peptides (*Pure & Appl. Chem.*, Vol. 31, No. 4, 1972, pp. 647 - 653).

VITAMINS

*Nomenclature for Vitamin B-6 and Related Compounds (*Pure & Appl. Chem.*, Vol. 33, Nos. 2 - 3, 1973, pp. 445 - 452).

*Also published in "Biochemical Nomenclature and Related Documents", 1978, a 220 page softcover manual published for The Biochemical Society for IUB (available from the Biochemical Society Book Depot, P.O. Box 32, Commerce Way, Colchester, Essex CO2 8HP, England).

III. Inorganic Substances

ACIDS

Chapter 5 of "Nomenclature of Inorganic Chemistry".*

ADDITION COMPOUNDS

Chapter 8 of "Nomenclature of Inorganic Chemistry".*

BORON COMPOUNDS

Nomenclature of Inorganic Boron Compounds (*Pure & Appl. Chem.*, Vol. 30, Nos. 3 - 4, 1972, pp. 681 - 710).

CARBON

International cooperation on characterization and terminology of carbon and graphite. (*Pure & Appl. Chem.*, Vol. 51, No. 7, 1979, pp. 1561 - 1574).

COORDINATION COMPOUNDS

Chapter 7 of "Nomenclature of Inorganic Chemistry".*

CRYSTALLINE PHASES

Chapter 9 of "Nomenclature of Inorganic Chemistry".*

ELEMENTS

Recommendations for the Name of Elements of Atomic Numbers Greater than 100 (*Pure & Appl. Chem.*, Vol. 51, No. 2, 1979, p. 381)

Chapter 1 of "Nomenclature of Inorganic Chemistry".*

IONS & RADICALS

"How to name an Inorganic Substance", the companion guide to the use of "Nomenclature of Inorganic Chemistry".

ISOTOPICALLY-MODIFIED COMPOUNDS

Nomenclature of Inorganic Chemistry, Part II. Isotopically-modified compounds. (*Pure & Appl. Chem.*, Vol. 53, No. 10, 1981).

NITROGEN

Nomenclature of Hydrides of Nitrogen and Derived Cations, Anions and Ligands (*Info. Bull.*, No. 2, 1978).

POLYANIONS

Chapter 4 of "Nomenclature of Inorganic Chemistry".*

SALTS

Chapter 6 of "Nomenclature of Inorganic Chemistry".*

ZEOLITES

Chemical nomenclature and formulation of compositions of synthetic and natural zeolites. (*Pure & Appl. Chem.*, Vol. 51, No. 5, 1979, p. 1091).

*Nomenclature of Inorganic Chemistry" is a 110 page hardcover volume (published 1970) available from Pergamon Press. A 36 page softcover booklet "How to Name an Inorganic Substance" was later published (1977) as a companion guide.

IV. Organic Compounds

ALCOHOLS & PHENOLS

Section C of "Nomenclature of Organic Chemistry".*

ALDEHYDES & KETONES

Section C of "Nomenclature of Organic Chemistry".*

CARBOXYLIC ACIDS

Section C of "Nomenclature of Organic Chemistry".*

CAROTENOIDS

Nomenclature of Carotenoids (*Pure & Appl. Chem.*, Vol. 41, No. 3, 1975, pp. 405 - 431).

COORDINATION COMPOUNDS

Section D of "Nomenclature of Organic Chemistry".*

CORRINOIDS

Nomenclature of Corrinooids (*Pure & Appl. Chem.*, Vol. 41, No. 4, 1976, pp. 495 - 502).

CYCLITOLS

Nomenclature of Cyclitols (*Pure & Appl. Chem.*, Vol. 37, Nos. 1 - 2, 1974, pp. 283 - 297).

HALOGENATED DERIVATIVES

Section C of "Nomenclature of Organic Chemistry".*

HETEROCYCLIC COMPOUNDS

Section B of "Nomenclature of Organic Chemistry".*

Revision of the extended Hantzsch-Widman System of Nomenclature for Heteromonocycles (*Pure & Appl. Chem.*, Vol. 51, No. 9, 1979, pp. 1995 - 2003).

HYDROCARBONS

Section A of "Nomenclature of Organic Chemistry".*

ISOTOPICALLY-MODIFIED COMPOUNDS

Section H of "Nomenclature of Organic Chemistry".* Also published in *Pure & Appl. Chem.*, Vol. 52, No. 2, 1979, pp. 355 - 380

NATURAL PRODUCTS

Section F of "Nomenclature of Organic Chemistry".*

NITROGEN-CONTAINING COMPOUNDS

Section C of "Nomenclature of Organic Chemistry".*

ORGANOMETALLIC COMPOUNDS

Section D of "Nomenclature of Organic Chemistry".*

ORGANOPHOSPHORUS COMPOUNDS

Section D of "Nomenclature of Organic Chemistry".*

ORGANOSILICON COMPOUNDS

Section D of "Nomenclature of Organic Chemistry".*

QUINONES

Nomenclature of Quinones with Isoprenoid Side-Chains (*Pure & Appl. Chem.*, Vol. 38, 1974, pp. 439 - 447).

STEREOCHEMISTRY

Section E of "Nomenclature of Organic Chemistry".*

STEROIDS

Nomenclature of Steroids (*Pure & Appl. Chem.*, Vol. 31, Nos. 1 - 2, 1972, pp. 283 - 322).

SULFUR-CONTAINING COMPOUNDS

Section C of "Nomenclature of Organic Chemistry".*

TETRAPYRROLES

Nomenclature of Tetrapyrroles (*Pure & Appl. Chem.*, Vol. 51, No. 11, 1979, pp. 2251 - 2304).

TOCOPHEROLS

Nomenclature of Tocopherols and Related Compounds (Provisional Nomenclature Appendix No. 47, September 1975).

"Nomenclature of Organic Chemistry" is a 550 page volume published in 1979. It is available in hardcover and softcover editions from Pergamon Press, Oxford.

Section A: Hydrocarbons.

Section B: Fundamental Heterocyclic Systems.

Section C: Characteristic Groups containing carbon, Hydrogen, oxygen, nitrogen, halogen, sulfur, selenium and Tellurium.

Section D: Organic Compounds containing elements that are not exclusively carbon, hydrogen, oxygen, nitrogen, halogen, sulfur, selenium and tellurium.

Section E: General Principles for the naming of natural products and related compounds.

Section H: Isotopically modified compounds.

V. Polymers

Nomenclature for regular single-strand and quasi single-strand inorganic and coordination polymers (Provisional) (to be published in *Pure & Appl. Chem.*, Vol. 53, late 1981).

Stereochemical definitions and notations relating to polymers (*Pure & Appl. Chem.*, Vol. 53, No. 3, 1981, pp. 733 - 752).

List of Standard Abbreviations (Symbols) for Synthetic Polymers and Polymer Materials (*Pure & Appl. Chem.*, Vol. 40, No. 3, 1974, pp. 473 - 476).

Basic Definitions of Terms Relating to Polymers (*Pure & Appl. Chem.*, Vol. 40, No. 3, 1974, pp. 477 - 491).

TERMINOLOGY, SYMBOLS, UNITS AND PRESENTATION OF RESULTS

I. General Chemical Terminology

CATALYSIS

Definitions, Terminology and Symbols in Colloid and Surface Chemistry — II. Heterogenous Catalysis (*Pure & Appl. Chem.*, Vol. 46, No. 1, 1976, pp. 71 - 90).

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